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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/710,401

07/08/2004

Min-Lung Huang

11571-US-PA

4400

31561

7590

05/04/2005

EXAMINER

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

CHU, CHRIS C

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/710,401

Applicant(s)

HUANG, MIN-LUNG

Examiner

Chris C. Chu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 1 includes the following reference number "116" that is not referenced in the specification of the instant invention. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
- a) "page 3, line 1, "bonding pad 112" should be --bonding pad 110--.
- Appropriate correction is required.

Claim Objections

3. Claims 1 and 6 are objected to because of the following informalities:
- (a) In claim 1, line 7, the term "cross-section" should be --top-view--.
 - (b) In claim 6, line 7, the term "cross-section" should be --top-view--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- (A) In claims 1 and 6, the term "near" is a relative term which renders the claim indefinite. The term "near" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
- (B) In claim 7, the term "substantially" is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

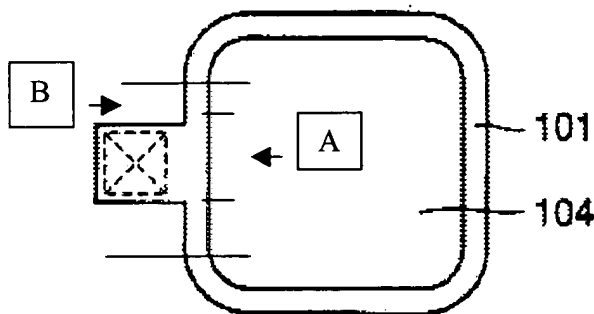
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 – 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Harada et al. (U. S. Pat. No. 6,417,575).

Regarding claim 1, Harada et al. discloses in e.g., Fig. 3 and Fig. 9 a chip structure, at least comprising:

- a chip (structure in e.g., Fig. 1B), having at least a bonding pad (101; column 18, line 23) and a transmission line (100; column 18, line 19) on a chip surface,

FIG. 9



- wherein the transmission line (100) is coupled to the bonding pad; and
- a passivation layer (102 and 103; column 18, line 63 – column 19, line 4), covering the chip surface,
- wherein the passivation (102 and 103) has an opening (104; column 19, line 4) to expose the bonding pad (101),

- wherein a cross-section of the opening (104) includes
 - o a straight line (A or B in Fig. 9) and an arc (the other portion except the “A” or “B” portion. Since the definition of “arc” includes a continuous portion of a curved line, the other portion except the “A” or “B” area read as an “arc”) connecting to two ends of the straight line, and
 - o the straight line is near to a connection terminal between the transmission line and the bonding pad (see e.g., Fig. 9).

Regarding claim 2, since the length of the straight line (A) is smaller than the half of the total length of the opening 104, the straight line of Harada et al. fully meets the claimed limitation.

Regarding claim 3, since the length of the straight line (B) is bigger than the half of the total length of the opening 104, the straight line of Harada et al. fully meets the claimed limitation.

Regarding claims 4 and 10, Harada et al. discloses in e.g., Fig. 9 the passivation layer (102 and 103) including an organic passivation layer (polyimide; column 19, lines 1 – 4).

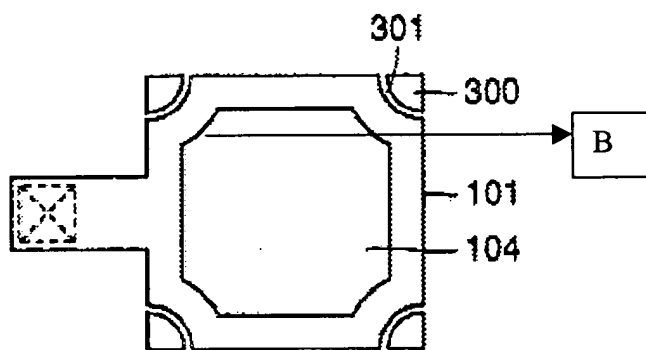
Regarding claims 5 and 11, Harada et al. discloses in e.g., Fig. 9 the passivation layer (102 and 103) including an inorganic passivation layer (SiO₂; column 18, lines 63 – 67).

Regarding claim 6, Harada et al. discloses in e.g., Fig. 3 and Fig. 50 a chip structure, at least comprising:

- a chip (structure in e.g., Fig. 1B), having at least a bonding pad (101; column 18, line 23) and a transmission line (100; column 18, line 19) coupled to the bonding pad,

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- wherein the bonding pad (101) and the transmission line (100) are on a chip surface;
and
- a passivation layer (102 and 103), covering the chip surface,
- wherein the passivation (102 and 103) has an opening (104) to expose the bonding pad (101),
- wherein a cross section of the opening (104) includes
 - a curving line (B in Fig. 50) and an arc (any other curved portion except the “B” portion) connecting to two ends of the curving line,

FIG.50

- wherein the curving line is concave to the arc and near to a connection terminal (105; see Fig. 4) between the transmission line (100) and the bonding pad (see e.g., Fig. 50).

Regarding claim 7, Harada et al. discloses in e.g., Fig. 50 each point of the curving line has a “substantially” equal distance to the connection terminal between the transmission line and the bonding pad.

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Regarding claim 8, Harada et al. discloses in e.g., Fig. 50 a curvature of the curving line being less than or equal to a curvature of the arc.

Regarding claim 9, Harada et al. discloses in e.g., Fig. 50 a curvature of the curving line being greater than or equal to a curvature of the arc.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ishihara, Kudo, Karasawa and Yano et al. disclose a shape of the pad opening.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is 571-272-1724. The examiner can normally be reached on 11:30 - 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chris C. Chu
Examiner
Art Unit 2815

C.C.
Tuesday, April 26, 2005


GEORGE ECKERT
PRIMARY EXAMINER